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Timestamp: [year=2008; month=8; day=5; hr=9; min=4; sec=41; ms=126; ]

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Application No: 10584886 Version No: 2.0

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Actual SeqID Count: 18

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# SEQUENCE LISTING

<110> Maines, Mahin D.

<120> METHODS OF MODULATING CELL CYCLE AND CELL SIGNALING PATHWAYS  
USING BILIVERDIN REDUCTASE

<130> 176/61623 (1208)

<140> 10584886

<141> 2006-08-31

<150> PCT/US2004/031866

<151> 2004-09-29

<150> 60/539,006

<151> 2004-01-23

<150> 60/506,805

<151> 2003-09-29

<160> 18

<170> PatentIn version 3.5

<210> 1

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<212> PRT

<213> Homo sapiens

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Ser Ser Ala Phe Leu Asn Leu Ile Gly Phe Val Ser Arg Arg Glu Leu  
35 40 45

Gly Ser Ile Asp Gly Val Gln Gln Ile Ser Leu Glu Asp Ala Leu Ser  
50 55 60

Ser Gln Glu Val Glu Val Ala Tyr Ile Cys Ser Glu Ser Ser Ser His  
65 70 75 80

Glu Asp Tyr Ile Arg Gln Phe Leu Asn Ala Gly Lys His Val Leu Val  
85 90 95

Glu Tyr Pro Met Thr Leu Ser Leu Ala Ala Ala Gln Glu Leu Trp Glu  
100 105 110

Leu Ala Glu Gln Lys Gly Lys Val Leu His Glu Glu His Val Glu Leu  
115 120 125

Leu Met Glu Glu Phe Ala Phe Leu Lys Lys Glu Val Val Gly Lys Asp  
130 135 140

Leu Leu Lys Gly Ser Leu Leu Phe Thr Ser Asp Pro Leu Glu Glu Asp  
145 150 155 160

Arg Phe Gly Phe Pro Ala Phe Ser Gly Ile Ser Arg Leu Thr Trp Leu  
165 170 175

Val Ser Leu Phe Gly Glu Leu Ser Leu Val Ser Ala Thr Leu Glu Glu  
180 185 190

Arg Lys Glu Asp Gln Tyr Met Lys Met Thr Val Cys Leu Glu Thr Glu  
195 200 205

Lys Lys Ser Pro Leu Ser Trp Ile Glu Glu Lys Gly Pro Gly Leu Lys  
210 215 220

Arg Asn Arg Tyr Leu Ser Phe His Phe Lys Ser Gly Ser Leu Glu Asn  
225 230 235 240

Val Pro Asn Val Gly Val Asn Lys Asn Ile Phe Leu Lys Asp Gln Asn  
245 250 255

Ile Phe Val Gln Lys Leu Leu Gly Gln Phe Ser Glu Lys Glu Leu Ala  
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Ala Glu Lys Lys Arg Ile Leu His Cys Leu Gly Leu Ala Glu Glu Ile  
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Gln Lys Tyr Cys Cys Ser Arg Lys  
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gatgctcttt ccagccaaga ggtggaggtc gcctatatct gcagtgagag ctccagccat	300
gaggactaca tcaggcagtt ccttaatgct ggcaagcacg tccttgtgga ataccatg	360
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35 40 45	

Gly Ser Ile Asp Gly Val Gln Gln Ile Ser Leu Glu Asp Ala Leu Ser  
50 55 60

Ser Gln Glu Val Glu Val Ala Tyr Ile Cys Ser Glu Ser Ser Ser His  
65 70 75 80

Glu Asp Tyr Ile Arg Gln Phe Leu Asn Ala Gly Lys His Val Leu Val  
85 90 95

Glu Tyr Pro Met Thr Leu Ser Leu Ala Ala Ala Gln Glu Leu Trp Glu  
100 105 110

Leu Ala Glu Gln Lys Gly Lys Val Leu His Glu Glu His Val Glu Leu  
115 120 125

Leu Met Glu Glu Phe Ala Phe Leu Lys Lys Glu Val Val Gly Lys Asp  
130 135 140

Leu Leu Lys Gly Ser Leu Leu Phe Thr Ala Gly Pro Leu Glu Glu Glu  
145 150 155 160

Arg Phe Gly Phe Pro Ala Phe Ser Gly Ile Ser Arg Leu Thr Trp Leu  
165 170 175

Val Ser Leu Phe Gly Glu Leu Ser Leu Val Ser Ala Thr Leu Glu Glu  
180 185 190

Arg Lys Glu Asp Gln Tyr Met Lys Met Thr Val Cys Leu Glu Thr Glu  
195 200 205

Lys Lys Ser Pro Leu Ser Trp Ile Glu Glu Lys Gly Pro Gly Leu Lys  
210 215 220

Arg Asn Arg Tyr Leu Ser Phe His Phe Lys Ser Gly Ser Leu Glu Asn  
225 230 235 240

Val Pro Asn Val Gly Val Asn Lys Asn Ile Phe Leu Lys Asp Gln Asn  
245 250 255

Ile Phe Val Gln Lys Leu Leu Gly Gln Phe Ser Glu Lys Glu Leu Ala  
260 265 270

Ala Glu Lys Lys Arg Ile Leu His Cys Leu Gly Leu Ala Glu Glu Ile

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280

285

Gln Lys Tyr Cys Cys Ser Arg Lys  
290 295

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&lt;211&gt; 295

&lt;212&gt; PRT

&lt;213&gt; Rattus norvegicus

&lt;400&gt; 4

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Gly Arg Ala Gly Ser Val Arg Leu Arg Asp Leu Lys Asp Pro Arg Ser  
20 25 30

Ala Ala Phe Leu Asn Leu Ile Gly Phe Val Ser Arg Arg Glu Leu Gly  
35 40 45

Ser Leu Asp Glu Val Arg Gln Ile Ser Leu Glu Asp Ala Leu Arg Ser  
50 55 60

Gln Glu Ile Asp Val Ala Tyr Ile Cys Ser Glu Ser Ser Ser His Glu  
65 70 75 80

Asp Tyr Ile Arg Gln Phe Leu Gln Ala Gly Lys His Val Leu Val Glu  
85 90 95

Tyr Pro Met Thr Leu Ser Phe Ala Ala Ala Gln Glu Leu Trp Glu Leu  
100 105 110

Ala Ala Gln Lys Gly Arg Val Leu His Glu Glu His Val Glu Leu Leu  
115 120 125

Met Glu Glu Phe Glu Phe Leu Arg Arg Glu Val Leu Gly Lys Glu Leu  
130 135 140

Leu Lys Gly Ser Leu Arg Phe Thr Ala Ser Pro Leu Glu Glu Glu Arg  
145 150 155 160

Phe Gly Phe Pro Ala Phe Ser Gly Ile Ser Arg Leu Thr Trp Leu Val  
165 170 175

Ser Leu Phe Gly Glu Leu Ser Leu Ile Ser Ala Thr Leu Glu Glu Arg  
180 185 190

Lys Glu Asp Gln Tyr Met Lys Met Thr Val Gln Leu Glu Thr Gln Asn  
195 200 205

Lys Gly Leu Leu Ser Trp Ile Glu Glu Lys Gly Pro Gly Leu Lys Arg  
210 215 220

Asn Arg Tyr Val Asn Phe Gln Phe Thr Ser Gly Ser Leu Glu Glu Val  
225 230 235 240

Pro Ser Val Gly Val Asn Lys Asn Ile Phe Leu Lys Asp Gln Asp Ile  
245 250 255

Phe Val Gln Lys Leu Leu Asp Gln Val Ser Ala Glu Asp Leu Ala Ala  
260 265 270

Glu Lys Lys Arg Ile Met His Cys Leu Gly Leu Ala Ser Asp Ile Gln  
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Lys Leu Cys His Gln Lys Lys  
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<212> DNA  
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gaaggatcca cgctctgcag cattcctgaa cctgattgga tttgtgtcca gacgagagct 240  
tgggagcctt gatgaagtac ggcagatttc tttggaagat gctctccgaa gccaaagat 300  
tgatgtcgcc tatatttgca gtgagagttc cagccatgaa gactatatac ggcagtttct 360  
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115

120

125

Met Glu Glu Phe Glu Phe Leu Lys Arg Glu Val Ala Gly Lys Glu Leu  
 130 135 140

Leu Lys Gly Ser Leu Arg Phe Thr Ala Ser Pro Leu Glu Glu Glu Lys  
 145 150 155 160

Phe Gly Phe Pro Ala Phe Ser Gly Ile Ser Arg Leu Thr Trp Leu Val  
 165 170 175

Ser Leu Phe Gly Glu Leu Ser Leu Ile Ser Ala Thr Met Glu Asn Arg  
 180 185 190

Lys Glu Asp Gln Tyr Met Lys Met Thr Val Gln Leu Glu Thr Gln Asn  
 195 200 205

Lys Ser Pro Leu Ser Trp Ile Glu Glu Lys Gly Pro Gly Leu Lys Arg  
 210 215 220

Asn Arg His Ile Ser Ile His Phe Lys Ser Gly Ser Leu Glu Glu Val  
 225 230 235 240

Pro Asn Val Gly Val Asn Lys Asn Ile Phe Leu Lys Asp Gln Asp Ile  
 245 250 255

Phe Ile Gln Lys Leu Leu Gly Gln Val Ser Ala Glu Asp Leu Ala Ala  
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Glu Lys Lys Arg Ile Leu His Cys Leu Glu Leu Ala Ser Asp Ile Gln  
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Arg Leu Cys His Arg Lys Gln  
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<212> PRT

<213> Sus scrofa

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Ser	Gln	Glu	Val	Glu	Val	Ala	Tyr	Ile	Cys	Ser	Glu	Ser	Ser	Ser	His			
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Val	Ser	Leu	Phe	Gly	Glu	Leu	Ser	Leu	Val	Ser	Ala	Thr	Leu	Glu	Glu			
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Lys	Lys	Ser	Pro	Leu	Ser	Trp	Ile	Glu	Glu	Lys	Gly	Pro	Gly	Leu	Lys			
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Arg	Asn	Arg	Tyr	Leu	Ser	Phe	His	Phe	Lys	Ser	Gly	Ser	Leu	Glu	Asn			
225					230					235					240			

Val Pro Asn Val Gly Val Asn Lys Asn Ile Phe Leu Lys Asp Gln Asn  
245 250 255

Ile Phe Val Gln Lys Leu Leu Gly Gln Phe Ser Glu Lys Glu Leu Ala  
260 265 270

Ala Glu Lys Lys Arg Ile Leu His Cys Leu Gly Leu Ala Glu Glu Ile  
275 280 285

Gln Lys Tyr Cys Cys Ser Arg Lys  
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<211> 21

<212> RNA

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<223> Primer 724BVR

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